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Prototypes, translation and research in social design education

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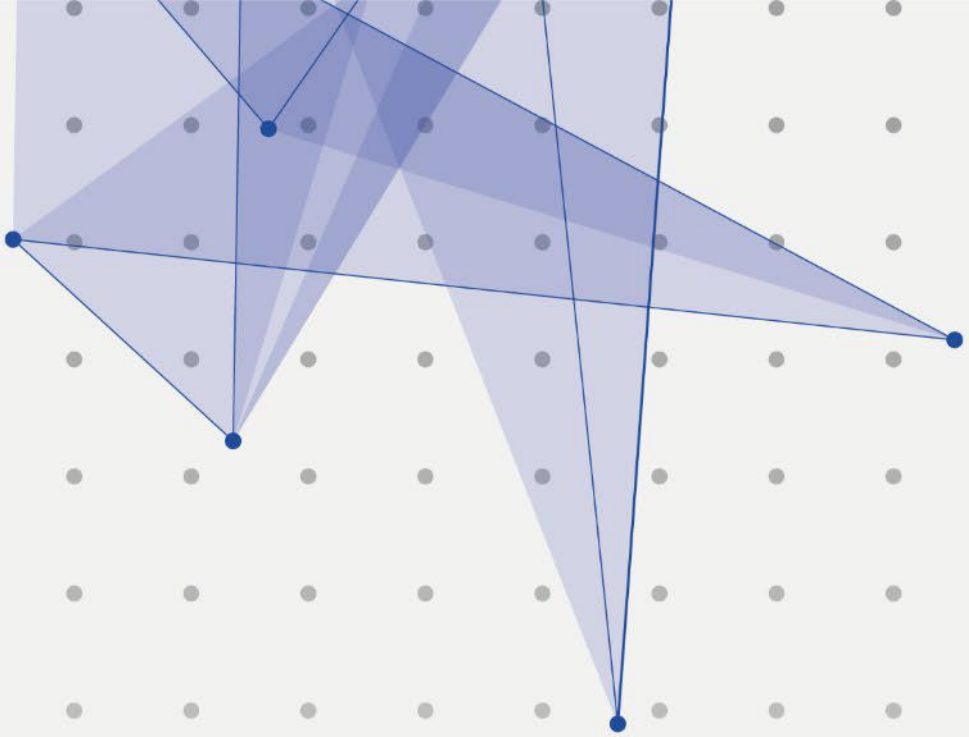

Eksig 2023

"**From Abstractness to Concreteness** – experiential knowledge and the role of prototypes in design research"

Proceedings

MILANO

19.06 — 20.06

eksig 2023
DRS special interest group on experiential knowledge

Design Research Society DRS

POLITECNICO MILANO 1863
DIPARTIMENTO DI DESIGN

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Conference Proceedings

From Abstractness to Concreteness – experiential knowledge and the role of prototypes in design research

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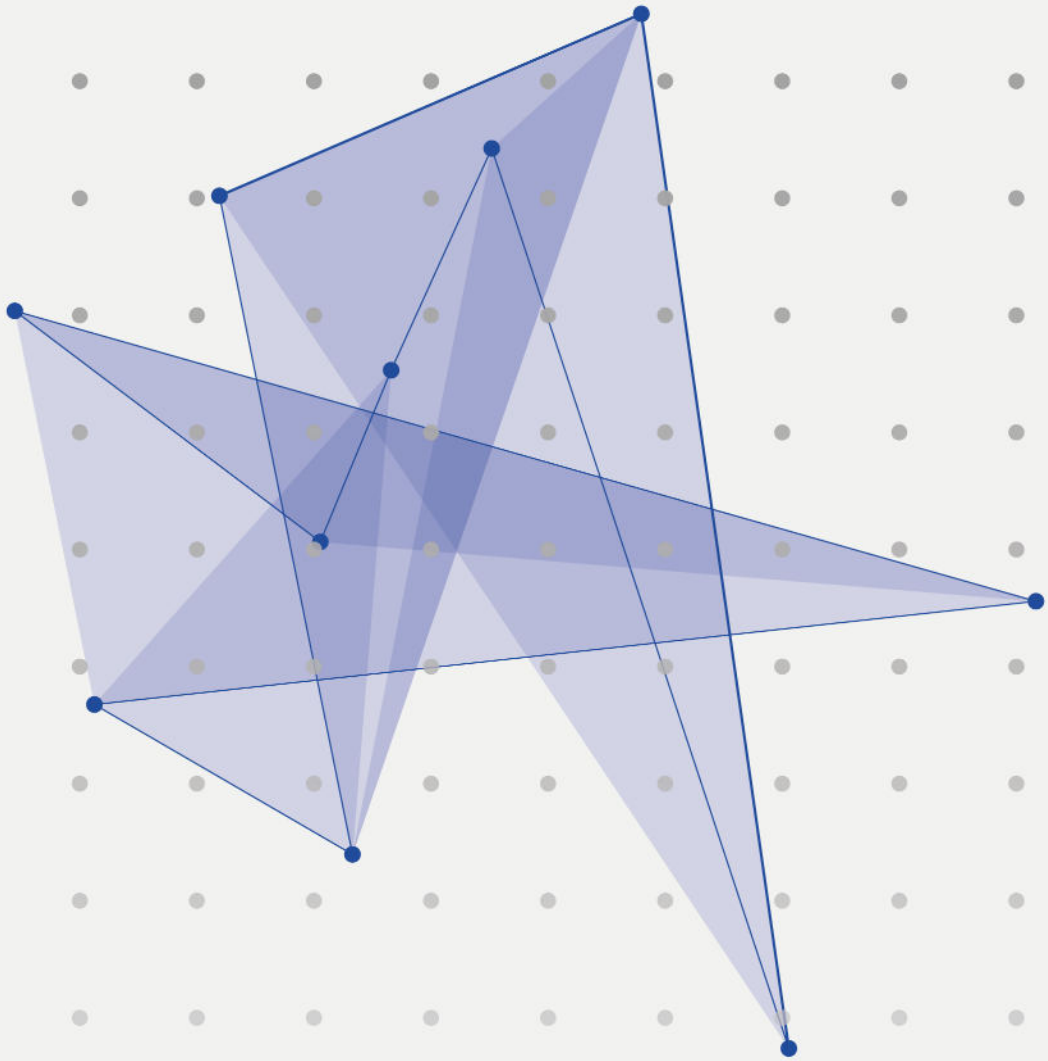

Track 8: Education processes and methods

- To Prototype to Learn Fronting Uncertainties.
A Pedagogy Based on Anti-Disciplinarity, Thinkering and Speculation

- Prototypes, translation and research in social design education

- Prototyping of theories

- Role of Physical mock-ups in the Ideation phase: A thematic analysis of the Pedagogic approach

- From Prototype1.0 to Prototype3.0: Situated learning in Prototype design for Chinese labour education

Prototypes, translation and research in social design education

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Abstract

In this paper, we propose to look at designing processes as interpretive acts of translations parallel to other various descriptive and iterative artifacts – briefs, mood boards, sketches, post-it boards, design drawings, technical drawings, user journey-maps and diagrams, renderings, mock-ups, etc. – and to look at what roles prototypes play within these processes of translation. More specifically, the role of prototypes within processes of translation will be investigated by looking at social design and especially in social design education projects.
Indeed, whereas prototypes have served designers for many decades to consider alternative outcomes, test out various approaches, and evaluate ergonomic needs and constraints, in social design, as part of participatory or codesign practices, prototypes offer even more potential for harnessing communities, mediating between various stakeholders, and highlighting a more relevant path for the design team. In a similar manner, in design education, prototypes are not only used to highlight the various stages of the design process but also the importance of the different design partners and stakeholders. Furthermore, prototypes can serve to highlight key values and ideologies relevant to a specific design strategy to articulate and enhance the designer's role in their local and professional communities. By using translation to link these spheres of knowledge, we will highlight an innovative approach to understanding the importance of prototypes in social design education.

social design; prototype; education; design research; semiotics

Introduction

There is a widespread agreement – also acknowledged by the call for paper of this conference – on the fact that, among the cascade or cloud of inscriptions, representations (Armando and Durbiano 2016; Beaubois 2015), or "descriptive artifacts" (Mattozzi 2019) – i.e. various iterations of the brief, mood boards, sketches, post-it boards (or their digital versions, such as Miro), drawings, technical drawings, diagrams focused on users journeys, renderings, mock-ups, etc. – that characterises designing processes, prototypes tend to come in the "later phases" (Sanders and Stappers 2014) or "far advanced in development" (Marcus 2014) of the designing process. Moreover, it is also widely acknowledged that prototypes allow experimentation (Corsin Jimenez 2014; Marcus 2014), by providing a possible, but still open to revision, configurations of what the desired outcome of the designing process should be.

The specificity of such experimentation lies in the fact that through prototypes “others”, i.e. people not part of the design studio or of the design process, like various kinds of stakeholders, potential users (design partners, as they are termed in the UK) or manufacturers can be involved through the presence of the prototype “on the table” (Stappers 2007) and engaged in the design process, producing “focused discussions” (ibid) and feedback, thanks also to the fact that the prototype can be tested by “confront[ing] the world” (ibid), also through trials of usage.

In this paper, we will take into account all these issues through the notion of “translation”, showing the relevance of this notion in order to understand design, and specifically the role of prototypes, through examples taken from design projects carried out within social design courses.

Therefore, the paper will also propose a reflection on the role of prototypes within social design education.

Translations within designing

We assume the design process as a process of iterative translations taking place from one of the “descriptive artefact” (brief, mood boards, sketches, post-it boards, drawings, technical drawings, diagrams focused on users journeys, renderings, mock-ups, etc.) we mentioned in the introduction, to the other. Of course, within this iterative process prototypes play a crucial role.

By translation, we mean the passage from a configuration (be it verbal, visual, tangible, etc., or a combination of all these options) to another configuration through the mediation of a third configuration, even just an imagined or “mental” one, within a process akin to the one of the Peircian sign. The third configuration – the mediating one – identifies, highlights, extracts, hierarchize and reconfigure features of the first configuration into the second one – a process that is usually intended as interpretation. Take, for instance, the passage from a sketch of a product to a prototype through a rendering: the rendering will keep only certain features of the sketch, adding others features, which in turn will influence the prototype. Of course, the translation between the sketch and the rendering is in turn mediated, and thus translated, by other possible configurations, for instance the configuration reconstructed “mentally” by the user and then the one articulated by the constraints and opportunities provided by the 3D modelling software. Or, take the passage from a brief to a sketch: it can be mediated by the configuration created by the set of products similar to the one mentioned in the brief found through a research on the internet (Ventura and Ventura 2015). Or, take the passage from a mock up of a seat to the prototype: it can be mediated by the configuration created by various materials and the body of a craftsman who is in charge of finding the right material and tries them out on his own body (Parolin and Mattozzi 2013).

As we can see, translations within designing are dense iterations of mediations, within which in between two configurations you can always find another one carrying out a translation.

To achieve these various modes of translation, designers enact several phases of key systems of interpretation, including a visual-material one (through semiotic denotations), a hermeneutic one, and the intricate understanding of the relation between design decisions and its manifestation of experiences, memories, feelings etc. (through a phenomenological

basis). This understanding enables designers to incorporate in the mediating configurations the socio-cultural behaviours of individuals and communities involved in and through the project or intervention, as well as – key issue for social design projects – social values and ideologies. These are translated into the project, both from a theoretical and ethical stance and from a practical stance through the collaboration of the design partners, using codesign and participatory design practices.

Prototypes as translations

Prototypes as special translations within the designing process

Not dissimilarly from other “descriptive artefacts”, prototypes take part in the translation processes in two ways: a prototype 1) is the translation of previous steps of the designing process in a temporary stable configuration 2) it prompts further translations that take the form of feedback, indications, and requests for revisions, which will likely lead to a new version of the prototype, when not to a revision of a portion of the designing process, going upstream the cascade of descriptive artefacts.

However, differently from other “descriptive artefacts”, prototypes come toward the end of the designing process, as we already noticed in the introduction, with reference to Sanders and Stappers (2014) and Marcus (2014). Therefore, prototypes need to carry out a translation that somehow summarizes and builds on all the previous translation by providing a temporary stable configuration, which gathers and articulates most of the features of what should be the actual output.

Seen in this way, prototypes carry out something more than one of the iterative translations punctuating the designing process, given that it enacts a version of the final configuration of the design project or intervention. Around it, others – other people besides those who have taken part to the designing process and who have a specific expertise related to design in general or to a specific designing process, like stakeholders of various kind, users or design partners, manufacturers – can be gathered and, through it, can be engaged and involved, at various degrees, within the designing process.

Therefore, prototypes open up the designing process to others, and through such opening trigger social change (Sanders and Stappers 2014). Such opening up provides prototypes with their experimental relevance, i.e. the possibility of “confronting the world” (Stappers 2007) through trials and verifying if what designed “works” or not. But not only. The experimental relevance of prototypes regards also opening up, in turn, other possible ways of designing and, hence, revisions of the designing process and the very design project – this second opening takes place especially if what designed does not seem to “work” or to fully “work”.

Such double opening – opening the design process to “others” and through it opening it to revisions – is key for social design, given its commitment to work for and with communities and to be sensitive to their values, points of view and dynamics.

Thus, prototypes are key steps in processes that tend to involve and engage communities, like those related to social design. Indeed, apart from using the prototype to check, reflect or

validate a design concept, a prototype can serve as a steppingstone in co-designing, through which community members interact with the design team.

Prototypes as translation: from many to one

Seen in the way we are outlining, prototypes are something more than just the translation from a vague and abstract idea into a concrete, visualized and materialized output – as somewhat suggested by the call of this conference. Whereas the cloud made up by the various descriptive artefacts (brief, sketches, mood boards, technical drawings, rendering, post-it boards, journey diagrams, etc.) constituting the previous steps of the designing process can seem, taken as a whole, vague and chaotic and can seem to outline a vague and more or less abstract idea of the design project or intervention, each instance is in itself definite, characterized by its own details, and concrete.

Thus, the translation prototypes achieve does not go so much from the abstract to the concrete, but mainly from various scattered and multiple concrete instances to one collecting and connecting many of them and many of their features in an, often operational, whole.

Prototypes as translation in design education

The specific role prototypes play in designing processes seen as translations is of course key also within design education – and, indeed, as Sanders and Stappers (2014) remarked that prototypes can let students understand the importance of theory in design practice and education.

Given that, in a prototype, students need to translate many of the previous translations, articulating them in one, usually material, manifestation, they often find themselves encountering, for the first time, disparate issues – e.g., issues of weight, ratio and ergonomics, just to name a few – they need to articulate all at once.

We need also to consider that, differently from professional practice, where prototypes can end up being the last step of the designing processes, but usually are the step before making and manufacturing, i.e. the process which will lead to the final output as a product, an actual service or an intervention, within education, prototypes are usually the final output of a designing process taking place in a studio course or in a thesis design research process. Thus, within education, prototypes notoriously prompt a very specific final translation: a judgment by teachers.

Usually such judgment is mediated by a theoretical, social, and practical professional debate between student and teachers and among teacher themselves.

Prototypes' relevance for social design

In our view of the prototype incorporates several attributes: first, a prototype is key in bridging different social groups; second, a prototype is crucial when conducting design research in general, but more so when working in the field of social design; third, a prototype is a crucial element in design research, not only from a practical point of view, but to test and integrate theoretical knowledge; and finally, a prototype is a quasi-ethical tool helping the designer to

step out of their professional stronghold and confront other cultural norms and constraints.

Prototypes in social design education

To bolster our claims, we wish to turn to several examples of students' works gathered through various cases taken from student projects of undergraduate and graduate programs in Hadassah College, Shenkar College, and the Master in Eco-Social Design of the Free University of Bozen-Bolzano.

As for the present paper, we do not intend to compare the various projects or the three education programs, but just to present different cases that we have experience of as teachers and supervisors, through which we can show how prototypes work as translations and prompt for further translations. Their unique attribute through social design focus will further enhance our approach to education strategies.

The first three cases come from thesis discussed at the Graduate Program of Interdisciplinary Design at Shenkar, whereas the fourth and the fifth from thesis discussed within a 4 years undergraduate program in inclusive design at Hadassah Academic College. Nevertheless, both share the same principles: during the last year of their studies, students conduct a lengthy theoretical and empirical process parallel to their final year project. This in turn is made of 4 parts: 1. An in-depth theoretical and/or historical research meant to outline the field of research. This can include the history of an object, socio-cultural attributes of a process, or general relevant theories from adjunct disciplines (behavioural psychology, educational philosophy, social attributes of occupation therapy, etc.). 2. Empirical research, focused on managing and manufacturing new knowledge through active research which includes ethnography, shadowing, visual/material content analysis, qualitative questionnaires, and more. 3. Added advanced research processes which include co-design or participatory design and validation using various prototypes. 4. Characterization of the designed project, including explaining every design decision, and in-length reflection as well as interpretation of the major innovation junctions of the project.

The last three cases come, instead, from the first introductory semester of the Masters in Eco-Social Design of the Free University of Bozen-Bolzano. This first semester introduces students coming from very different bachelor backgrounds – mainly design related, but not necessarily – to social design. The introductory design studio course brings together teachings related to product and spatial design (3D artifacts), communication design (2D artifacts), and Design Research. This effort has been carried out in collaboration with Officine Vispa (https://officinevispa.com/), an NGO working in community development instigating projects for Bozen-Bolzano's peripheral neighbourhoods, such as Don Bosco and Casanova-Kaiserau. From the get-go, students are familiarized with social design and are acquainted with the neighbourhood through visits and meetings with residents. As classes are manily conducted in the neighbourhood rather than at the university, students have more time to conduct deeper ethnographic explorations of the neighbourhood and its residents, while applying various relevant design research methodologies. Based on this, students need to develop design projects for and with communities, often focusing on the issue of care. These design projects end with a prototype that is used in three ways: first, as part of an exhibition aimed at the entirety of the neighbourhood's residents, including people not directly involved in a specific project, sharing ways by which the neighbourhood could be transformed for their

benefit; second, as a prototype to be assessed by the Municipality, who partially finances the project, to understand if anything can be actually developed, manufactured and integrated into the neighborhood; third, as an artefacts around which the final examination takes place.

Prototype as Self-Enactment

In her graduate final year program, fashion designer Eden Ben Ami focused on the negative and positive traits of the historical corset vis-a-vis the socio-cultural perception of the feminine body. After a lengthy historical, theoretical, and empirical research (including interviews with fashion designers and qualitative questionnaires), Ben Ami continued to conduct an in-depth period of auto-ethnography. In this innovative period, she reproduced the historical corset and used it in her daily chores for whole days and recorded her physical, emotional, and psychological reflections on its use. Surprisingly, her research refuted classic myths regarding the corset including death at a young age, physiological damage, objectification of the feminine body, and being forced to wear it by decree of male family members (see Gibson, 2020). In her brief, Ben Ami concluded that since the historic corset was aimed for a standing position, it would be extremely valuable for a society that suffers from physical ailments due to lengthy periods of sitting motionless at workstation (a fact intensified since the COVID-19 lockdowns).



Figure 1: Eden Ben Ami's corset

The auto-ethnography research started with the reproduction of a classic 19th-century corset, wearing it daily and reflecting on the experience in a journal. As the hours spent wearing the corset grew, so did the time it took Ben Ami to wear the corset shortened from 15 minutes to 3, then to 20 seconds. Gradually she noticed changes in the way her body

positioned itself and the ways it reflected her posture and relation to the outside world. Indeed, as a fashion designer working hours leaning over a sewing machine ending with an aching lower back, the corset eliminated these aches. While a positive change was the strengthening of the core muscles, a negative change was rib aches, due to a wrong measuring of the corset, resulting in Ben Ami shortening it by a few centimetres. Altogether, she spent over 1500 hours wearing the corset, leading to redesigning it and shifting its design till it reached the smallest shape that would still produce the same effect.

In other words, in this case, the prototype served a dual purpose. First, to reflect on classic functional design dilemmas relating to shape, size, material etc. However, the second purpose is the crucial one. In this case study, the act of translation was not only the dialogue between corsets as have been developed and used through history and the final project, but a translation of norms, conventions, and embodiment, mediated by her body and her practices. Such translation resulted not only in the rejection of contemporary perception of this object but in harnessing this product for a new understanding of both the feminine body, as well as a professional practitioner, and the intricate relation between labour and her body.



Figure 2: The corset in detail

Prototype as Function Testing

Typically, prototypes used in architecture or urban design are scaled down, thus focusing on an act of translating both the scale, as well the aesthetics and functionality. In her graduate project, Gilat Blum searched for a design system meant for a liminal area on the seafront of Tel Aviv. As in other Mediterranean seafront cities, the sea strip of Tel Aviv is characterized by a very narrow strip of sand, not very far from residential and commercial urban surroundings. Likewise, the climate is very dry, hot, and humid, raising the issue of designed shading solutions, as well as the classic needs of residents and tourists out for a fun day on the beach. After an in-depth research period including observations, interviews, and qualitative questionnaires, Blum designed a set of shading solutions and public furniture made of sand and other organic materials. Following her research, Blum understood that this site of “urban nature” needed to cater to different communities - tourists, parents of young children, teenagers, runners, people meditating or exercising Yoga, etc. These required solutions to their differing needs, such as a sun/shade ratio, privacy/commonality, and quiet space/lively atmosphere, as well as a preference for different hours throughout the day. These helped define her brief to design a flexible solution that would also be sustainable and cheap to manufacture and maintain. Her various models, ranging in materials and layout helped in this dual translation. Her solution rests on the municipality’s diggers that will transform sand into designed shapes and harden the sand through sustainable chemical solutions (see Hurkxkens, 2020), then fitted with 2D perforated textile sheets for shading. Thus, each temporary construction crumbles back at the end of the day, allowing for different shapes the next day, according to varying needs and the number of different visitors.

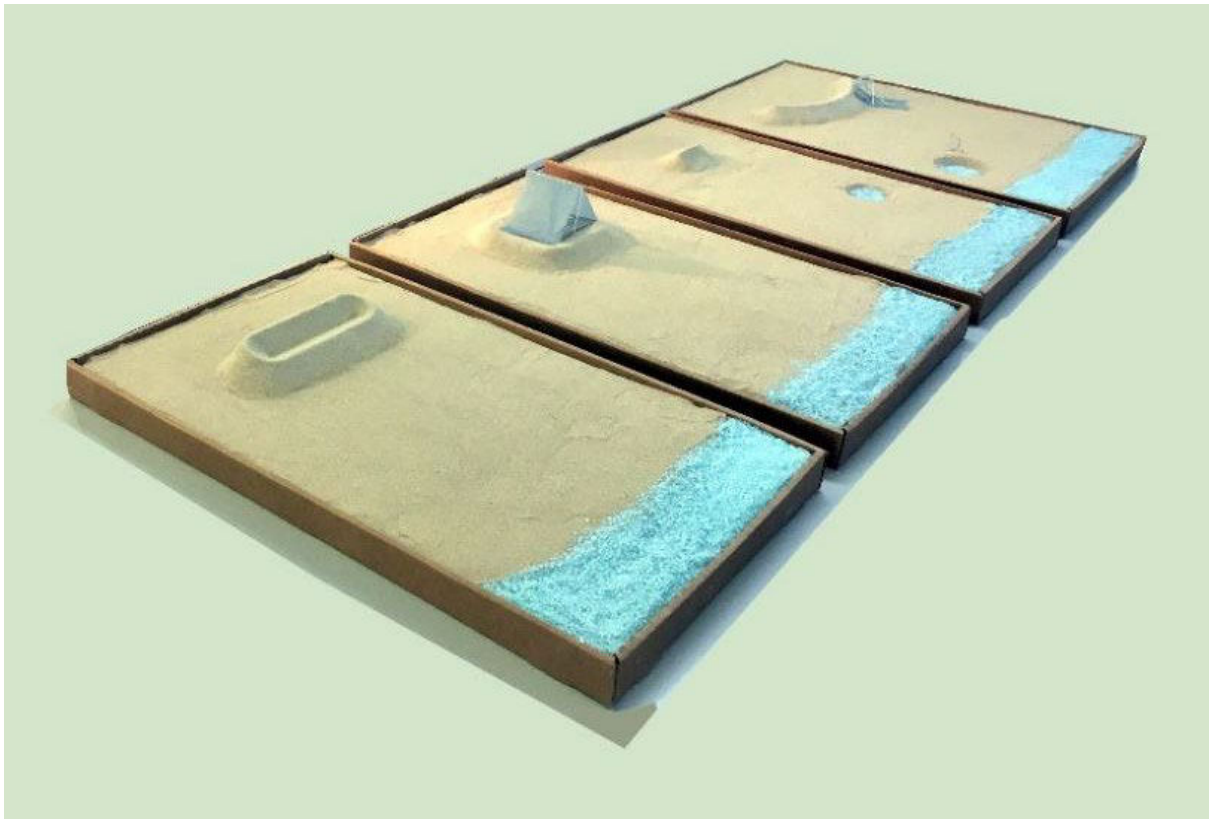

Figure 3: Gilat's scaled prototype for the coastline of Tel Aviv

In another seemingly functional project, designer Noa Matityahu used her relationship with her grandmother to offer an inclusive solution for the elderly, following COVID-19 the rising epidemic of acute loneliness among the elderly population. Through her prototype, Matityahu focused on four challenges the elderly is often faced, especially so during a lockdown or when family members are living far away from their residence: loneliness, the fear of new technologies, keeping a constant connection with family members, and a need for keeping one's fine motor control skills. In this case, as well, apart from functional testing, the prototype served to focus on key attributes and values of inclusive and social design – low-cost and preferably low-tech solutions; bespoke design, emanating a sense of style and high-end design, yet low-cost manufacturing; easy to use; and a designed product offering a plethora of functions. The main material in this product is wood - which connects to simplicity and warmth, and a single horizontal hinge alludes to backgammon board games which are very common among Israelis from all age groups. The user then chooses a design pattern to begin embroidering along the chosen lines. The interesting addition is that upon placing a tablet in the designated area, the elderly person shares their pattern with family members, thus enabling a mutual activity adding an actual conversation, and working together on the same project. The gentler the pressure, the more accurate would the final result be. Thus, the prototype in this example works on four different layouts, while translating the core values of social design - designing for what matters, working with and for social groups, and focusing on other values that the monetary one.

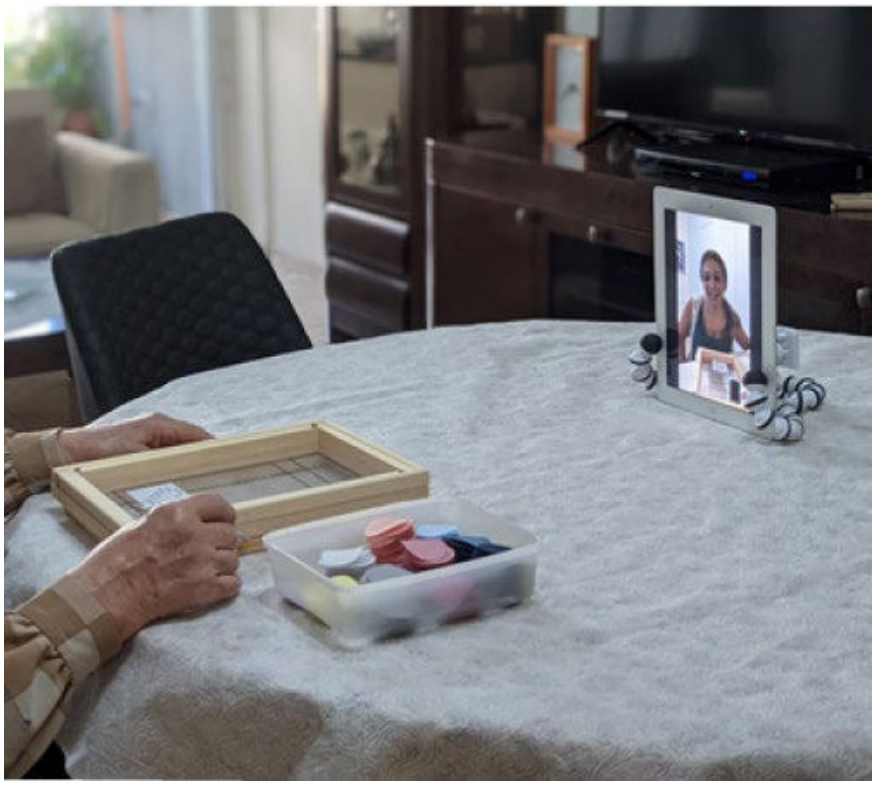

Figure 4: Noa Matityahu's prototype in use by her grandmother

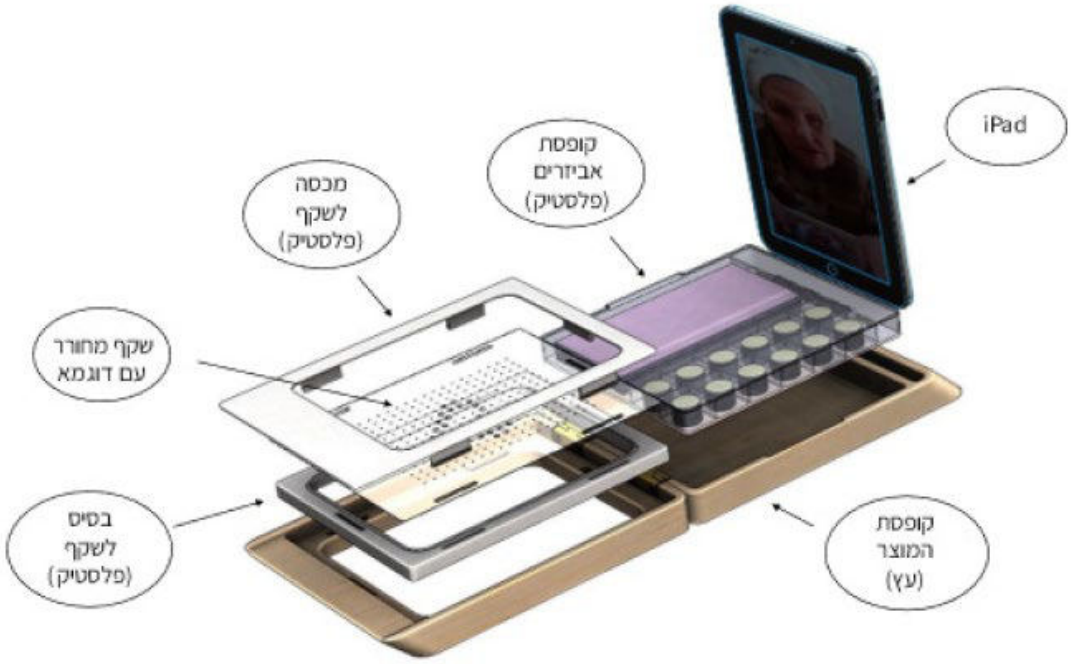

Figure 5: Noa Matityahu's detailed view of the prototype

Prototype as a Cultural Tool

In a different project, Hadar Sasson from HAC, focused on HIV among pregnant women in rural Uganda. Her unique project included two products – a testing platform meant for blood collecting and analysing samples, and a visual campaign meant for raising awareness – we wish to focus on the latter, due to its unique cultural attributes. For various reasons, including a post-COVID-19 climate and academic safety regulations, Sasson was unable to physically travel to Uganda to conduct research. However, she conducted multiple interviews and remote observations with both local community members and design practitioners from the research area. Indeed, for raising awareness Sasson designed a poster that evolved through several prototypes. While it was fairly clear that the layout needed an image, headline, and short text, and fonts were an easy choice, the image and colours presented various socio-cultural issues. Consulting a local graphic design studio, Sasson focused on a combination of harvest (corn) flowering through a mother, thus alluding to the importance of a healthy relationship between a mother and her foetus. The colours were gathered from local symbols and rituals and validated through the local graphic design studio as well. Indeed, in this case, the act of translation through the prototype did not only help to figure out design choices but also navigate and create a healthy dialogue between the two cultures – the designer and the local community.

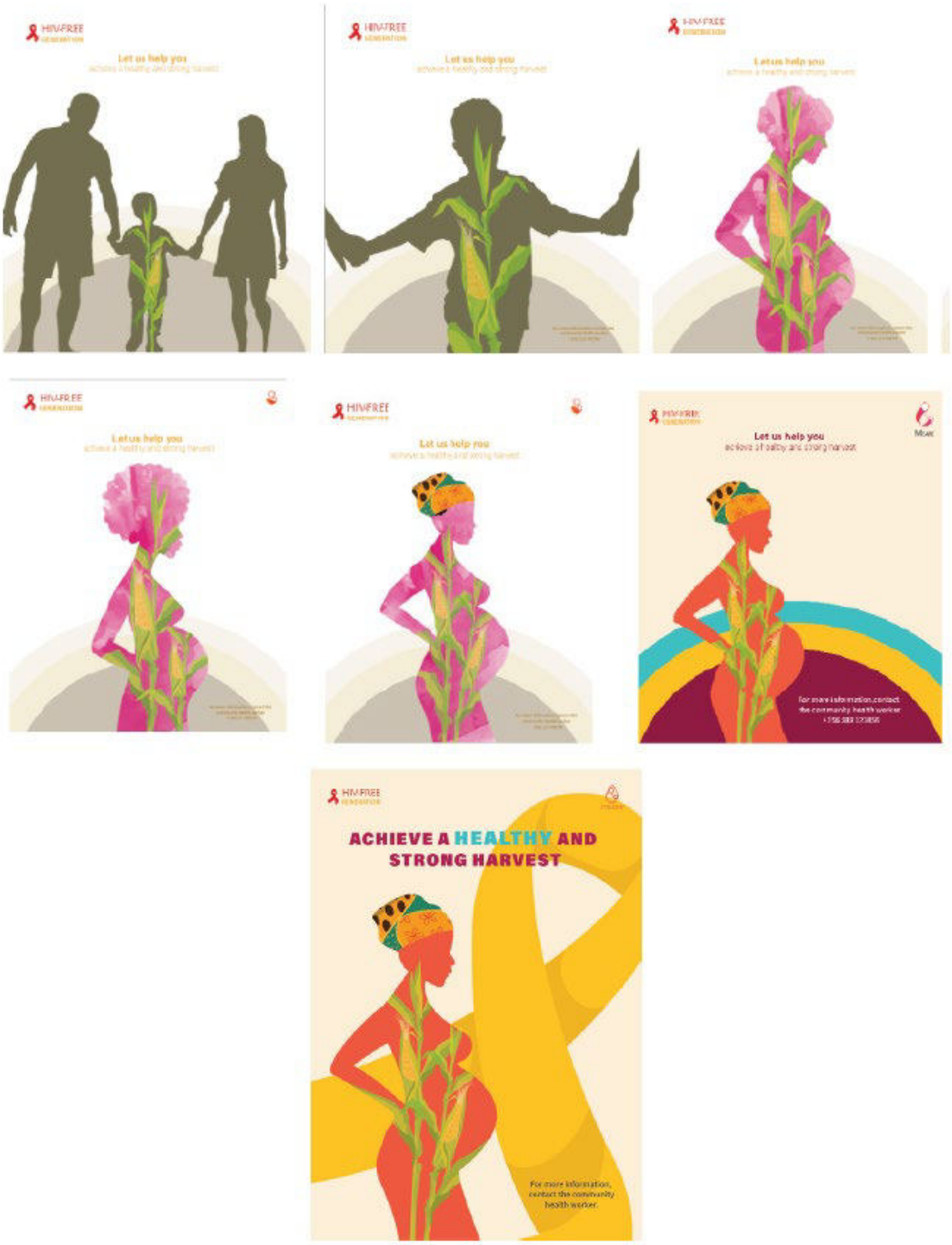

Figure 6: Hadar Sasson's poster prototypes for healthcare among rural communities in Uganda

Another case study from the same undergraduate program at HAC focused on a local community as well, that of ultra-orthodox Jewish women. In this community, it is strictly forbidden to mention the feminine body, even in relation to healthcare issues. Therefore, breast cancer, albeit being a crucial matter to confront from an early age, can lead to mothers choosing not to talk to their young daughters on the subject, and harming them while doing so. Designer Pliah Mendel chose to address this issue through design research. Her project consists of two elements - a board depicting three representations of lumps found

in the feminine breast and their meaning in relation to breast cancer. These representations were made of silicone and were designed in a manner that would not imitate the feminine breast too closely to not induce shame or unease. In addition, these were hung on a wall in local Mikveh centres (a centre for ritualistic purification baths, taken a week after the end of menstruation). In this location, as women were naked in any case, a focus on their own bodies would not be considered boastful or generate shame. Thus, the prototype was used not only to help in the translation of the design concept, but also to decipher the amount of similitude between the prototype and an actual breast.



Figure 7: Pliah Mendel's prototype for breast cancer detection in the Ultra-Orthodox community in Jerusalem

Prototypes for/with a Neighborhood

Twiddle



Figure 8: Two uses of Twiddle

The first prototype is Twiddle, designed by Simon Barthmuss, Giulia Fasoli, and Vanessa Deotto, a deck chair, which is also a podium, but that can lend itself to other uses. It has been designed for a specific square of the neighbourhood Casanova-Kaiserau, Piazza Anita Pichler Platz, to allow people to attend, enliven and enjoy that location. It has been designed to be used for a special initiative – a local, not yet existing, festival – but it could be also used outside the context of the festival. Besides using it as a deck chair for public events related to the festival, anyone can turn it into a podium by easily flipping it. The three designers' main aim was to collect stories of the neighbourhood that could be told by each person who experienced and performed their narrative from Twiddle as a podium.

The project can also be seen as a service design, since these deck chairs/podiums can become a service available all year round and the designers also planned the service in order to become self-sustained, by outlining a system of care instigated the inhabitants. Conversely, Twiddle is an element of a much broader social design project which aims at making a specific square of the neighbourhood a place for social gathering and exchange.

The deck chair/podium is the centre and main mediator of such a project and its prototype is what emerges more clearly in the exhibit (Fig. 8), also because it is an artifact that could be used autonomously, not in relation to the neighbourhood and the festival for which it has been designed.

In another application, the prototype also stood at the centre of the final exam.

Such a project and its prototype emerged out of three months' worth of focused observation, walks, and familiarization with the neighbourhood, which made the designers particularly sensitive to squares "framed by the many large building complexes" (Fig. 9), as they described it . These activities were recorded mainly through photos and audio. The comparison of these recordings allowed the designers to identify busier and calmer places. The emptiness and stillness of squares and especially Anita Pichler's prompted the students to design something that would change such a situation. Therefore, they started to design directly on photos they took, turning them into grayscale.



Figure 9. Streets and buildings of the Casanova-Kaiserau neighborhood of Bozen-Bolzano.



Figure 10 Rendering of Twiddle use.

Visit walks and observations throughout the neighbourhood were translated into specific inscriptions (photos and audio). Each photo or audio track was then classified through an abstract category (busy/calm-still). From there, the idea of imbuing still places with life and activity was translated into drawings, where the uniformity of the still square was further highlighted by making it grayscale and by inserting in a contrasting way, coloured elements, which translated the previous abstract category “busy/calm” into another, less abstract one, coloured greyscale (Fig. 10).

The design of the deck chair/podium was then translated by materializing the “busy-coloured” part of the category, though somehow maintaining it given that used as a deck chair, Twiddle, affords more calmness, and used as a podium affords more activity and noise.



Figure 11. Twiddle at the final project exhibiton, where it could meet the inhabitants.

Rattopparole (word-patches)

Rattopparole (word-patches) is a project designed by Guillermo Mondelli and Andrea Righetto for the neighbourhood of Don Bosco in order to provide inhabitants with local pride and a sense of community. Rattopparole are patches designed from images and words related to the neighbourhood, that inhabitants can attach to their clothes to show their origin, and sense of belonging to their neighbourhood.



Figure 12. Patches designed and used in the Rattopparole project



Figure 13. Patch on a jacket.

The process of translation in this case is very explicit (Fig. 14). Through visits, walks, short interviews, and observations, words, colours and images of the quarters have been recorded and then stylized up to finally making them into prototype patches.



Figure 14. Translations from the neighborhood to the patches

The project has now been considered by the partner NGO, Officine Vispa, to be developed as part of its Social Tailoring, but since it has been developed during the first lockdown, prototypes need still to be used as a prompt for discussion with possible design partners.

Rivista Casanova



Figure 15. Rivista Casanova's prototype at the end of project exhibition



Figure 16. Rivista Casanova's prototype at the end of project exhibition with visitor

The last project from the first introductory semester of the Masters Degree in Eco-Social Design of the Free University of Bozen-Bolzano is *Rivista Casanova*, an "editorial" project of an oversized magazine ("rivista", in Italian), designed by Iske Conradie, Carola Kurz and Maria Pasqualini (Figg. 15 and 16), which entails, the display structure of such a magazine.

Rivista Casanova, was designed to be placed in the public space, tied and suspended to vertical elements present in the territory, like lampposts or trees. Therefore, it would act as a sort of paginated *dazibao* (wall newspaper). It was meant to allow participatory contributions from the inhabitants of the Casanova-Kaiserau neighborhood while relying on easily produced A4 sheets – used as basic module.

Like the other two design projects presented earlier, *Rivista Casanova* translated a field research activity into a product. The three students had noticed that there were no posters, no community boards, no graffiti or personalization, and no sense of shared lives within the neighborhood. The only stories being told about the inhabitants was from outside, from news outlets based outside the neighborhood, which often stigmatized the inhabitants of Casanova-Kaiserau. Therefore, the three students thought to provide an oversized magazine layout and structure which would generate curiosity and could work as point of attraction for the community around which gather and, at the same time, take directly part to the narration of the very neighborhood.

This case is of particular interest because it has been chosen by the Municipality of Bozen-Bolzano to be manufactured and installed in the neighborhood, therefore bringing the design project beyond the borders of a student design project and the prototype through which it is materialized. One consequence of this further step has been a second act of translation in which the prototype was transformed into an real-world product. Such further translation has entailed several significant transformations from the initial design prototype stemming mainly from legal issues relating to municipal legislation, especially related to safety and to the occupation of public space with permanent elements.

Because of these legal issue the main transformation from the first prototype is that the final product had to be manufactured with fixed pages and on wheels as a moveable element brought every morning to the defined location, rather than as an inherent and permanent “outgrowth” of the environment.

Moreover, the fact of being moveable entailed another transformation, not of the product, of the structure, but of it’s management– someone had to be in charge to move it in the public space during the day and removing it during the night. In part, this could be allocated to a community member, thus enhancing responsibility and involvement by other design partners.

As in the other cases presented in this paper, *Rivista Casanova* was not just a product – a display construct and a graphic layout – but rather a service, which required not only an act of design but also the periodical management of the creation of its content. While originally sketched, it remained mainly in the original design and prototype, and later assigned to the community in a co-design effort striving for the best management and display of content. However, this part has remained preliminary and unresolved and, once decided to actually manufacture the product, such aspect was overlooked, focusing on the materiality of the prototype and its interaction with the environment and expecting that someone would take care of the rest (the involved NGO? the three designers? the Municipality?). The actual production of the prototype, then, clarified the necessity of roles, responsibilities and timeframe of this project in the immediate future.

Thus, in this case the prototype’ strength shifted from the classic perception of a designed product (aesthetics, configuration, materials, colors etc.), to an ability to highlight a societal system, allocate responsibilities and harness a community to join in action. This is why, at present, the realization of the project has failed. It already started to show cracks during the manufacturing process, which entailed further work by the three student designers who probably did not expect this development and were not able or interested in following it’s further development. Indeed, while good for the community, in design education prototypes can highlight the nitty-gritty daily routine of functioning as a designer, as well as highlight the

complexity of social projects contrary to classical project relying on a clear market and consumption trajectories.



Figure 17. Rivista Casanova's steel display



Figure 17. Rivista Casanova's steel display in the neighborhood

Discussion

The prototypes portrayed within the various design projects we have introduced in this paper stem from different standpoints in social design education trajectories – masters and bachelor, starting or ending of programs – and thus present differing complexities. Nevertheless, being all related to social design they all present key similarities, in that they encompass a phase of field research – whether the research field is own bodies in their socio-cultural complexities or a neighborhood or various kind of practices –, within which social research methods are used. From such field research elements, features and issues emerge – like body sensations, functional responses for values and attributes, color palettes, adequate shapes and sizes, etc. – that need to be then translated into the prototype, in order for it to work as a way to engage partners and stakeholders, as well as to flesh out social

sensibilities and points of friction. Moreover, not only are they built around strong and defined social values and ideologies, but they are centered around specified local communities, with which designers work in-tandem.

Nevertheless, the prototypes developed at the end of the education trajectory tend to be used more easily as actual operational prototypes. Being in direct contact with local communities, this leads to using prototypes as material and visual liaison venues with community-based design partners (local residents), stakeholders and hypothetical clients and purchasers (NGOs, municipalities, local government agencies, industry partners etc.).

An important aspect of the ways in which prototypes are used within social design educational projects is the different functions they play within the project: First, validating the project's practical hypothesis ("is it working?"); second, applying theoretical knowledge gathered *through* and *with* and community ("does it generate relevant ideas, thoughts, and reflection?"); third, is the community engaged in and accepts the project through collaborative efforts ("is it socially and culturally appropriate?"); fourth, are the core values of the project truly embedded in the final designed product ("value-oriented correlation?").

Because of these various functions, there is an interesting reframing of the relationship between the design process, on the one hand, and the function and importance of the prototype in social design education, on the other. While in social design, prototypes tend to be less accurate in their material and industry-ready features, due to the complex and lengthy nature of these projects, their importance to the design process cannot be ignored. We can clearly see the tension between a working socially designed artefact and a working product in the last presented case study – the oversized community magazine. There, the final product, though working as an actual designed product, differed relevantly from the social design prototype, and did not work as well as a social design intervention.

All these raise an issue regarding the very notion of the adequate prototype for social design projects and how it should be harnessed in educational projects that are limited in time and resources, yet call for intricate answers to complex questions. Nevertheless, what these examples ascertain is that prototypes have a place and an important role to play in the designing process and more so when dealing with social design education. Indeed, as wicked problems become more numerous and designers are called to offer suitable solutions, so will the importance of using prototypes in think tanks and in relation to theoretical and complex models rise.

Seen as a combined act of translation and concretization, the prototype in social design continues to another layer. Through a gradual and collaborative process, it brings together an abstract layer (comprised of ideas, values, theories and concepts) as well as an empirical layer (comprised of data that was discovered, developed and put on trial through the design process) which evolve to a visual and material manifestation. These various instances – like a color palette, a material sample, a set of core values, and translation, into a specific configuration – emerge within the designing process and are then scattered along its development. The prototype is also made from the collection, selection and connection into an operational whole of these often very concrete elements. Thus, the act of translation serves not only to initiate these layers but also to mediate between the various design partners and finally gather these options and infuse them into a validated and interpreted designed whole.

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References

Armando, A., & Durbiano, G. (2017). Teoria del progetto architettonico*.* Dai disegni agli effetti*. Roma: Carocci.*

Beaubois, V. (2015). Ethnographies du design. Vers une diagrammatisation de la conception*. Techniques & Culture. Revue semestrielle d’anthropologie des techniques, 64, 48–63.*

Corsín Jiménez, A. (2014). Introduction*. Journal of Cultural Economy, 7(4), 381–398.*

Gibson, R. (2020). The Corseted Skeleton: A Bioarchaeology of Binding*. Springer Nature.*

Hurkxkens, I. (2020). Robotic Landscapes: Topological Approaches to Terrain, Design, and Fabrication*. Unpublished doctoral dissertation, ETH Zurich University.*

Marcus, G. (2014). Prototyping and Contemporary Anthropological Experiments With Ethnographic Method*. Journal of Cultural Economy, 7(4), 399–410.*

Mattozzi, A. (2020). Describing Artifacts. What design and anthropology share, but Design Anthropology disregards*. Antropologia, 7(2 N.S.), 105–128.*

Parolin, L.L., & Mattozzi A. (2013). Sensitive Translations: Sensitive Dimension and Knowledge within Two Craftsmen’s Workplaces. *Scandinavian Journal of Management*, 29 (4): 353–66..

Sanders, E. B.-N., & Stappers, P. J. (2014). Probes, toolkits and prototypes: Three approaches to making in codesigning*. CoDesign, 10(1), 5–14.*

Stappers, P. J. (2007). Doing Design as a Part of Doing Research*. In R. Michel (Ed.), Design Research Now: Essays and Selected Projects (pp. 81–91). Birkhäuser.*

Ventura, J., & Ventura, G. (2015) Exphrasis : Verbalizing Unexisting Objects in the World of Design*. Design and Culture 7 (April): 185–202.*

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